

REMARKS

Claims 1-19 are pending in the application.

In the Office Action mailed on May 25, 2005, claims 1-19 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over either U.S. Patent No. 6,547,967 to Adler et al. ("Adler") or U.S. Patent No. 4,046,939 to Hart ("Hart"). Each reference is addressed individually below.

§ 103 Rejection of Claims 1-19 Over Adler

Adler discloses a ceramic network including connected struts having circular or convex cavities (Abstract). The ceramic network can be formed by impregnating a fiber network with a ceramic suspension, removing excess suspension, drying the impregnated network, removing the fiber network, and sintering the remaining structure to form the ceramic network (col. 3, lines 33-40; col. 8, lines 52-62). Ceramic networks thus formed are described as having the same three-dimensional structure as the original fiber network template, and including ceramic struts with round cavities (Examples 1-5).

In contrast to Adler, Applicants' claim 1 is directed to a composite porous media filter that includes a conduit having an inlet for receiving a fluid and an outlet for providing a filtered fluid. Within the conduit is a composite porous media that includes a foam having a reticulated, inter-cellular structure with a multiplicity of interconnected pores extending therethrough. Pores of the foam are impregnated with sintered powder. Claims 2-19 depend from claim 1.

Adler does not disclose or suggest a composite porous media including a foam having pores impregnated with a sintered powder as claimed. Rather, Adler discloses a ceramic network that has the same three-dimensional structure as a fiber network template, and includes ceramic struts with round cavities. There is no disclosure or suggestion of sintered powder impregnating pores of the ceramic network, and the network is not described as a foam. Indeed, Adler teaches away from the use of traditional open-cell ceramic foams, citing various alleged disadvantages of such structures, for example, low mechanical strength (col. 1, line 34 – col. 2, line 59).

The Office Action asserts that Adler at col. 1, lines 20-21 and 26-47 discloses a foam having pores impregnated with sintered powder. However, the cited passage does not in fact make such a disclosure. Instead, it describes methods for making a ceramic foam by impregnating a polymer foam with a ceramic suspension, drying the foam, burning out the polymer foam, and then sintering the remaining ceramic coating to form the ceramic foam. At

col. 1, lines 33-36, Adler explains that “[o]pen-cell ceramic foam manufactured by this method is a replication of the cell-like polymer structure of the starting material. As a result of burning out the polymer foam, the remaining ceramic struts are hollow.” Therefore, this section simply concerns formation of a hollow ceramic foam. There is no teaching or suggestion that the ceramic foam thus formed has sintered particles impregnating pores of the foam as claimed.

In sum, claims 1-19 are not *prima facie* obvious over Adler, at least because the reference does not teach or suggest every element of claim 1. Adler does not disclose or suggest a foam having pores impregnated with a sintered powder as claimed. Moreover, there would be no motivation for one of ordinary skill in the art to modify the teachings of the reference to obtain a composite porous media filter including a foam having pores impregnated with a sintered powder as claimed. Indeed, as noted above, Adler teaches away from the use of foams, citing their alleged disadvantages (col. 1, line 34 – col. 2, line 59). Accordingly, claims 1-19 are not obvious over Adler, and Applicants respectfully request that the present rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

§ 103 Rejection of Claims 1-19 Over Hart

Hart discloses a foam material that resists passage of noxious chemicals. The foam is impregnated with a particulate adsorbent such as activated carbon, which is bound in the foam by an organic binder (Abstract; col. 1, line 54 – col. 2, line 8). Hart teaches administration of the particulate adsorbent to the foam in a suspension including a binder. Upon curing, the binder holds the adsorbent in place within the foam (*e.g.*, col. 1, lines 54-68; Examples 1-3). A carbon-filled foam thus formed is disclosed as providing superior protective capability and air permeability (Example 7). Hart discloses that a foam also can be impregnated with (in addition to the adsorbent) a chemically active material, a liquid repellent, an elemental carbon-free solution or dispersion of the binder, or a suspension of pigment (col. 2, lines 12-18; col. 5, lines 1-11). The foam material is described as particularly useful for making garments or coverings to protect people exposed to hazardous chemicals (*e.g.*, col. 2, lines 40-47).

Like Adler and unlike the claimed invention, Hart does not disclose or suggest a composite porous media filter including a foam impregnated with a sintered powder as claimed. The particulate adsorbent disclosed by Hart is not sintered, instead being bound within the foam by an organic binder. There is no teaching or suggestion that any of the other additives disclosed by Hart (*e.g.*, a chemically active material, a liquid repellent, an elemental carbon-free solution

or dispersion of the binder, or a suspension of pigment) would take the form of a sintered powder.

In sum, claims 1-19 are not *prima facie* obvious over Hart, at least because the reference does not teach or suggest every element of claim 1. Hart does not disclose or suggest a sintered powder impregnating pores of a foam, and there would be no motivation for one of ordinary skill in the art to modify the teachings of the reference to obtain a composite porous media filter including a foam having pores impregnated with a sintered powder as claimed. There would be no reason to provide Hart's disclosed additives or particulate adsorbent, which is secured within the foam by a binder, in the form of a sintered powder. Accordingly, claims 1-19 are not obvious over Hart, and Applicants respectfully request that the present rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Conclusion

In view of the remarks presented above, Applicants respectfully submit that all of the rejections contained in the Office Action of May 25, 2005 have been overcome, and all of the pending claims are in condition for allowance.

Applicants hereby petition for a one-month extension of time to respond to the Office Action of May 25, 2005. Please deduct the \$60.00 fee for this purpose from our Deposit Account No. 08-0219. No other fees are believed to be due in association with this submission. However, please charge any other payments due or credit any overpayments to our Deposit Account No. 08-0219.

The Examiner is encouraged to telephone the undersigned at the number listed below in order to expedite the prosecution of this application.

Respectfully submitted,

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